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EDG Data Set Name

MODIS/Aqua Geolocation Angles Daily L2G Global 1km SIN Grid Day

Granule Shortname

MYDMGGAD

Version	Acquisition Range	Science Quality Status
V003	March 6 2003 (2003065)	Validated

Data Set Characteristics

Area = 10° x 10° lat/long

Image Dimensions = 2 (1200x1200 row/column)

Average File Size = ~27 MB

Resolution = 1 kilometer

Projection = Sinusoidal

Processing Level = 2G

Data Format = HDF-EOS

Science Data Sets (SDSs) = 7

Color	Azimuth Angle
Black	Fill
Yellow	-180° to -160°
Green	-160° to -140°
Blue	-140° to -120°
Purple	-120° to -100°



Product Description

The MODIS Global Geolocation Angle Day-mode (MYDMGGAD) files contain information on solar illumination and instrument viewing geometry. These data can be used to model the geometric relationship and distance between the area of the Earth's surface that was imaged, the sun, and the sensor. This is often required to perform atmospheric corrections, composite data from multiple days, and/or to convert or calibrate spectral data to known (absolute) radiance or reflectance units.

Color	Zenith Angle
Black	Fill
Purple	10° to 15°
Green	15° to 20°
Orange	20° to 25°
Pink	25° to 30°



The above images represent daytime geolocation information acquired over the western coast of North America on July 26, 2003. The example shown of solar azimuth (top image) quantifies the direction from which the sun was illuminating the area at the time of observation. The example of solar zenith (bottom image) quantifies the angle between the ground surface normal (local vertical) and the sun at the same time. MYDMGGAD also contains information on sensor angle quantified in a similar manner as the examples shown above, as well as the range from the sensor to the ground point. The combination of sensor and solar angle information allows the solar illumination and instrument viewing geometry of the surface target to be determined.

MYDMGGAD files are used as input to higher level products such as MODIS Surface Reflectance (MYD09). Geometric information for each sensor observation is stored on a geolocated grid, with Level 2 geophysical parameters stored as Level 2 Gridded (L2G) products. Each file contains all of the MODIS day-mode data acquired for a single data-day (24 hours GMT) that intersects the tile. The observations stored in the L2G grids are examined by the Level 3 products to extract the most relevant observations for each grid cell.

NOTE: These products are validated, meaning that product uncertainties are well defined over a range of representative conditions. Although there may be later improved versions, these data are ready for use in scientific publications.

SDS	Units	Data Type -bit	Fill Value	Valid Range	Multiply by Scaling Factor
Solar Azimuth	Degree	16-bit signed integer	-32767	-18000 - 18000	0.01
Solar Zenith	Degree	16-bit signed integer	-32767	0 - 18000	0.01
Sensor Azimuth	Degree	16-bit signed integer	-32767	-18000 - 18000	0.01
Sensor Zenith	Degree	16-bit signed integer	-32767	0 - 18000	0.01
Range (pixel-sensor)	Meters	16-bit unsigned integer	0	27000 - 65535	25
Geolocation Flags	Bit Field	8-bit unsigned integer	255	0 - 248	na
Number of Observations	na	8-bit signed integer	255	0 - 127	na

Order Data through the EOS Data Gateway

(<http://edcimswww.cr.usgs.gov/pub/imswelcome/>)

EOS Data Gateway Search Tips

Data Center: EDC-ECS
Sensor: MODIS
Dataset: MODIS/Aqua Geolocation Angles Daily L2G Global 1km SIN Grid Day
Spatial: HORIZONTALTILENUMBER Max/Min VERTICALTILENUMBER Max/Min
Geographic Extent: Type Lat/Long Range or Draw on Map
Temporal Extent: 2003-03-06 to present

Retrieve Data through the LP DAAC Data Pool

(<http://LPDAAC.usgs.gov/tutorial/datapool.html>)

Product Information

Product Description - Not Available

User Guide - Not Available

[Algorithm Theoretical Basis Document\(ATBD\)](#)

(http://eospsso.gsfc.nasa.gov/eos_homepage/for_scientists/atbd/viewInstrument.php?instrument=MODIS)

[EOS Data Products Handbook Volume 2 \(2000\)](#)

(http://eospsso.gsfc.nasa.gov/eos_homepage/for_scientists/data_products/vol2.php)

Contact Information

[LP DAAC User Services](#)

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URL: <http://LPDAAC.usgs.gov/modis/mydmggadv3.html>

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